What is claimed is:

1. A reflector referencing system for neurosurgical instruments and operative treatment apparatus comprising
a source of preferably infrared radiation,
at least two mapping or referencing cameras,
a computer unit connected to the cameras having a graphic display terminal and several reflectors,
characterized in that
at least two reflectors can be applied removably via adapters to instruments or operative treatment apparatus in an arrangement exclusively characteristic for this array of reflectors.

2. The reflector referencing system as set forth in claim 1, wherein said reflectors are configured spherical and with a reflective coating.

3. The reflector referencing system as set forth in claim 1, wherein two reflectors are secured to an instrument via connectors applied to said instrument, more particularly, via a pointer or a calibration rod.

4. The reflector referencing system as set forth in claim 1, wherein three reflectors are each secured to at least one arm end of an adapter configured with reflector arms and a fastener base, said fastener base being securable to a surgical instrument or an operative treatment apparatus.

5. The reflector referencing system as set forth in claim 1, wherein at least three reflectors are secured to an adapter for attachment to a surgical microscope.

6. The reflector referencing system as set forth in claim 1, wherein it furthermore comprising a three-armed reference fasteners having a fastener base likewise comprising three reflectors securable in a particularly characteristic arrangement at each arm end, said base being provided at its end with a clip flexibly adapting to said fastener point in each case.

7. The reflector referencing system as set forth in claim 6, wherein said reference adapter comprises preferably at said output point of said three arms a conically tapered funnel bowl having a central calibration point for the tips of said surgical instruments.

8. A marker system for referencing and mapping parts of said body to be subjected to neurosurgery, including at least three artificial landmark prominences, just as many adapters for attaching said landmark prominences to the patient, wherein each individual landmark prominence outputs an image exclusively characteristic of itself for mapping diagnostic patient data and for subsequently monitoring the operation.

9. The marker system as set forth in claim 8, wherein said landmark prominences consist of metal bodies which due to their specific material density, size, shape and arrangement are individually distinguishable when determining data in a computer tomography as well as in mapping with infrared cameras.

10. The marker system as set forth in claim 9, wherein said landmark prominences consist of aluminum balls of a mappable specific shape and/or size configured removable from said fasteners.

11. The marker system as set forth in claim 8, wherein it comprises an additional set of funnel-shaped landmark prominences, the funnel centerpoint of which corresponds to the centerpoint of said landmark prominences by which they can be swapped prior to referencing at the operating table.

12. A calibration process for mapping the angular and spacing position of referencing cameras, comprising
applying a calibration tool having two reflectors secured at predetermined positions at a known space away from each other in the viewing range of both cameras,
moving said calibration tool three-dimensionally in said viewing range,
mapping several intermediate positions of said calibration tool by said referencing cameras and converting the resulting data by means of a computer unit individually into three-dimensional coordinates and
computing and memorizing said angular and spacing position of said cameras from said three-dimensional positions of said reflectors by means of said computer unit.

13. The process as set forth in claim 12, wherein a graphic display terminal displays said projected relative position of said reflectors during said three-dimensional movement of said calibration tool.

14. The process as set forth in claim 12, wherein a pointer provided with removable reflectors is used as said calibration tool.

15. The process as set forth in claim 12, wherein a calibration rod provided with removable reflectors is used as said calibration tool.

16. A control for a surgical microscope comprising
a microscope stand having a base and several interarticulated arms movable three-dimensionally powered or manually and a microscope mounting and control unit,
a source of preferably infrared radiation,
at least two mapping or referencing cameras,
a computer unit including a graphic display terminal connected to said cameras,
wherein
at least three reflectors are connected to said microscope removably via an adapter in an arrangement uniquely characteristical for this reflector array.

17. The control as set forth in claim 16, wherein three-dimensional positioning said microscope in a first calibration is done by means of focusing the optics of said microscope on a point having known three-dimensional coordinates, preferably the calibration point of a reference adapter, the focusing data being transferred by a data transfer means to said computer unit whilst said computer unit maps the three-dimensional position of said microscope by means of said reflectors and said cameras.

18. The control as set forth in claim 17, wherein after said first calibration, and in each case by signalling said actuator motors of said microscope by said computer unit or by feedback of said microscope movements and position data to said computer unit, the following control sequences are implemented:

a) automatically tracking and focusing an instrument tip, the position of which is known to said computer unit via reflectors;

b) automatically focusing a memorized or predetermined point of operative treatment; and

c) focusing a point of operative treatment from various three-dimensional and angular positions of said microscope.

19. An ultrasonic diagnostic system comprising

an ultrasonic emitter/detector,

an analyzer unit and display terminal connected to said ultrasonic emitter/detector, wherein

a reflector adapter having at least three reflectors is secured to said ultrasonic emitter/detector, said reflector adapter being integrated in a reflector referencing system as set forth in claim 1.

20. A Neuro-navigation system comprising

a reflector referencing system as set forth in claim 1 and

a marker system as set forth in claim 8.

21. The Neuro-navigation system as set forth in claim 20, wherein furthermore a microscope control as set forth in claim 16 for a surgical microscope is comprised.

22. The Neuro-navigation system as set forth in claim 20, wherein a calibration process as set forth in claim 12 is implemented prior to application of said Neuro-navigation system.